

REMARKS

The Office Action dated September 28, 2005, has been received and carefully noted. The amendments made herein and the following remarks are submitted as a full and complete response thereto.

By this Amendment, claims 1, 2, 7, 8, 16, 17, 23 and 24 have been amended. No new matter is added.

Entry of this Amendment is proper under 37 C.F.R. § 1.116 since this Amendment: (a) places the application in condition for allowance for reasons discussed herein; (b) does not raise any new issue regarding further search and/or consideration since the Amendment amplifies issues previously discussed throughout prosecution; (c) does not present any additional claims without canceling a corresponding number of finally-rejected claims and (d) places the application in better form for appeal, should an appeal be necessary. The Amendment is necessary because it is made in reply to arguments raised in the rejection. Entry of the Amendment is thus respectfully requested.

Accordingly, claims 1-9, 12-14 and 16-26 are currently pending in the present application and are respectfully submitted for consideration.

Rejection of Claims 1-5, 7, 8, 9, 12, 13 and 16-24 Under 35 U.S.C. § 103(a)

Claims 1-5, 7, 8, 9, 12 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tokuda et al. (U.S. Patent No. 5,134,965 A, hereinafter "Tokuda") in view of Otsubo et al. (U.S. Patent No. 4,985,109, hereinafter "Otsubo").

Claims 16-26 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Tokuda in view of Otsubo.

These rejections are respectfully traversed.

In making the rejection, the Office Action characterized Tokuda as allegedly showing each and every element in the claimed invention with the exception that "Tokuda does not teach a specific thickness 'd' for the dielectric plate [and] ... does not teach a slot antenna where a part of the number of slots is closed." The Office Action relies on Otsubo for allegedly curing these deficiencies.

Applicants submit that Figure 13 of Tokuda merely shows cavity resonator chambers 20a and 20b. An opening portion of the bottomed cylinder-shaped cavity resonator chamber 20b is blocked by the slot plate 34 which is connected and fixed onto the cavity resonator chamber 20a. Accordingly, the cavity resonator chamber 20b and slot plate 34 of Tokuda are grounded electrically. The two slot plates 34 and 32 are arranged in parallel with each other. A waveguide 2 is connected to the bottom of the cavity resonator chamber 20b so as to be located in an eccentric position with respect to the cavity resonator chamber 20b. However, Tokuda fails to disclose or suggest at least "one end of the standing wave is positioned on the plasma exciting surface."

According to one example of the claimed invention, the plasma exciting surface is required to substantially coincide with the surface of the dielectric body facing away from the microwave radiating surface. In order for Tokuda's arrangement to meet the requirement, one end of the standing wave must be located on the lower surface of quartz plate 5. However, Tokuda merely says that "the standing wave in the lower

cavity resonator chamber 20a" (see, col. 14, lines 40-41). Therefore, Tokuda's structural arrangement is neither comparable nor the same as the structural features of the present invention.

Furthermore, Tokuda discloses at col. 14, lines 2-5, that, "the length t of each of the cavity resonator chambers 20a and 20b is established an integral multiple of the half of the guide wave length or a value near the integral multiple thereof." As clearly shown in Fig. 13 of Tokuda, the length t is an internal height of the cavity resonator chambers 20a and 20b. However, the distance D , as recited in the claimed invention, on the other hand, is the distance between the microwave radiating surface and the surface of the dielectric body facing away from the microwave radiating surface. In order for Tokuda's length t to match with the distance D of the claimed invention, the length t must not be the internal height of the cavity resonator chamber 20a, but must be a distance between the slot plate 34 and the lower surface of the quartz plate 5. In view of this, Tokuda also fails to disclose the condition for the distance D in the claimed invention.

Otsubo fails to show at least the feature of "wherein one end of the standing wave is positioned on the plasma exciting surface."

Hence, Applicants submit that Tokuda in view of Otsubo fail to disclose or suggest each and every element recited in the present invention as recited in claims 1, 2, 7, 8, 16, 17, 23 and 24.

To establish *prima facie* obviousness, each feature of a rejected claim must be taught or suggested by the applied art of record. See M.P.E.P. §2143.03 and *In re*

Royka, 490 F.2d 981 (CCPA 1974). As explained above, Tokuda in view of Otsubo, taken alone or in combination, do not teach or suggest each feature recited by pending claims 1, 2, 7, 8, 16, 17, 23 and 24. Accordingly, for the above provided reasons, Applicants respectfully submit that pending claims 1, 2, 7, 8, 16, 17, 23 and 24 are not rendered obvious under 35 U.S.C. § 103 by Tokuda in view of Otsubo. Therefore, Applicants respectfully submit that claims 1, 2, 7, 8, 16, 17, 23 and 24 are allowable.

As claims 3, 5 and 9 depend from claim 1, claim 4 depends from claim 2, claims 12 and 13 depend from claim 7, claims 18, 20-21 depend from claim 16, claim 19 depends from claim 17, and claims 25 and 26 depend from claim 23, Applicants submit that each of these claims incorporates the patentable aspects therein, and are therefore allowable for at least the reasons set forth above with respect to the independent claims, as well as for the additional subject matter recited therein.

Accordingly, Applicants respectfully request withdrawal of the rejection.

Rejection of Claims 6 and 14 Under 35 U.S.C. § 103(a)

Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Tokuda and Otsubo in view of Tsuchihashi et al. (U.S. Patent No. 6,109,208, hereinafter "Tsuchihashi").

In addition, claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Tokuda and Otsubo in view of Tsuchihashi. These rejections are respectfully traversed.

The references of Tokuda and Otsubo are discussed above. The reference of Tsuchihashi is applied for allegedly teaching plural slots of the microwave radiating

antenna where the plural slots in the peripheral direction are closed. It is submitted that Tsuchihashi fails to overcome the above-described drawbacks of Tokuda and Otsubo. Hence, Applicants submit that Tokuda in view of Otsubo and further in view of Tsuchihashi fail to disclose or suggest each and every element recited in claims 6 and 14 of the present application.

Furthermore, Applicants respectfully note that claim 6 depends from claim 1, and claim 14 depends from claim 7. Therefore, it is respectfully submitted that claims 6 and 14 should be deemed allowable for at least the same reasons Claims 1 and 7 are allowable, as well as for the additional subject matter recited therein.

Applicants respectfully request withdrawal of the rejection.

Conclusion


In view of the above, Applicants respectfully submit that each of claims 1-9, 12-14 and 16-26 recites subject matter that is neither disclosed nor suggested in the cited prior art. Applicants also submit that the subject matter is more than sufficient to render the claims non-obvious to a person of ordinary skill in the art, and therefore respectfully request that claims 1-9, 12-14 and 16-26 be found allowable and that this application be passed to issue.

If for any reason, the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper has not been timely filed, the Applicant respectfully petitions for an appropriate extension of time.

Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, referring to client-matter number 107176-00007.

Respectfully submitted,



Sam Huang
Registration No. 48,430

Customer No. 004372
ARENT FOX, PLLC
1050 Connecticut Avenue, N.W., Suite 400
Washington, D.C. 20036-5339
Tel: (202) 857-6000
Fax: (202) 857-6395

SH:ksm